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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,043	10/09/2003	Kari Kirjavainen	29385/39667	8156

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EXAMINER

BRINEY III, WALTER F

ART UNIT

PAPER NUMBER

2615

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/682,043

Applicant(s)

KIRJAVAINEN, KARI

Examiner

Walter F. Briney III

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-14, 16-18 and 20-25 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1-3, 5, 6, 12-14 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bolleman et al. (US Patent 5,682,075).**

Claim 1 is limited to “an electromechanical transducer.” Besides some minor amendments to clarify the claim language, the applicant has currently amended this claim to recite those limitations found in originally filed claim 3, which was shown apropos the Non-Final Rejection filed 28 February 2006 to be anticipated by Bolleman. This claim is currently rejected for the same reasons previously presented in said Non-Final Rejection. The applicant’s remarks concerning this claim’s patentability over the cited prior ^{art} is treated below in the proceeding section entitled Response to Arguments. Therefore, Bolleman anticipates all limitations of the claim.

Claims 2, 5, 6 and 12-14 are limited in part to “a transducer as claimed in claim 1,” as covered by Bolleman, while **claims 17-20** are limited to “a method for transforming energies from mechanical energy into electrical energy and/or vice versa.” These claims are rejected for the above reasons regarding claim 1 as well as the respective reasons set forth in the Non-Final Rejection filed 28 February 2006.

2. **Claims 1, 4 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Tamura et al. (US Patent 3,894,199).**

Claim 1 is limited to “an electromechanical transducer.” Tamura discloses an electret electrostatic electroacoustic transducer. See Abstract. As seen in figure 2, Tamura discloses “a transducer” comprising “at least two transducer elements” of “multilayer structure” comprising elements 21, 211 and 212 as well as 22, 221 and 222. As seen, an air gap exists between each element and a diaphragm 23, the air gaps also comprise part of the multilayer structure. The air gaps allow air to flow. The diaphragm bends to adjust the thickness of the air gaps, and thus, the “thickness” of each element. The diaphragm also displaces mass, thereby shifting the “center of mass.” As seen in figure 2, “controlling means” 26 is applied to stimulate the diaphragm’s motion.

Regarding the new claim limitations, it is noted that each transducer element is inherently controllable on its own, i.e. “separately-controllable,” because each element has its own electrode 21 or 22. In this way, each element, in combination with the diaphragm 23, can change its thickness with the application of a voltage to the element’s respective electrode. Therefore, Tamura anticipates all limitations of the claim.

Claim 4 is limited to “a transducer as claimed in claim 1,” as covered by Tamura. Tamura discloses an “air impermeable layer” 23 between the two elements. Therefore, Tamura anticipates all limitations of the claim.

Claim 16 is limited to “a transducer as claimed in claim 1,” as covered by Tamura. As seen in figure 2, each element comprises “a porous layer” 211 and 221

with an electret 212 and 222 formed at "separate points" on the porous layer. See column 1, lines 62-66. Therefore, Tamura anticipates all limitations of the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 7, 8, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolleman in view of Kirjavainen (US Patent 4,654,546).**

Claims 7 and 8 are limited in part to "a transducer as claimed in claim 1," as covered by Bolleman, while **claims 21 and 22** are limited in part to "a method for transforming energies from mechanical energy into electrical energy and/or vice versa." These claims are rejected for the above reasons regarding claim 1 as well as the respective reasons set forth in the Non-Final Rejection filed 28 February 2006.

4. **Claims 9-11 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolleman in view of Brettell (US Patent 3,136,867).**

Claims 9-11 are limited in part to "a transducer as claimed in claim 1," as covered by Bolleman, while **claims 23-25** are limited in part to "a method for transforming energies from mechanical energy into electrical energy and/or vice versa." These claims are rejected for the above reasons regarding claim 1 as well as the respective reasons set forth in the Non-Final Rejection filed 28 February 2006.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

5. **Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

Claim 15 is limited to “a transducer as claimed in claim 1,” as covered by both Bolleman and Tamura. However, it is quite clear that neither prior art reference discloses magnetized layers as claimed. While Croft was initially cited, it is noted that Croft does not disclose “separately-controllable” elements. Thus, claim 15 is allowable over the cited prior art.

Response to Arguments

Applicant's arguments filed 01 June 2006 have been fully considered but they are not persuasive.

With respect to claim 1, the applicant alleges on page 7, lines 7-15, of the current response that Bolleman does not disclose, teach or suggest that two or more transducer elements are “separately-controllable,” to which the examiner respectfully disagrees. In support of this argument, the applicant notes that only one voltage source 20 is provided to the separate layers of figure 2 of Bolleman, thus concluding that the layers are mutually controlled since no other sources are depicted. However, the scope of the claim merely suggests that the transducer elements are controllable, *per se*, not

that they are controlled. That is, the fact that only one source 20 is depicted by Bolleman only limits the audio system contemplated by Bolleman, but not the transducer. Rather, the transducer of Bolleman clearly comprises at least two layers that are capable of separate control. The ability to be separately controlled is evidenced by the separate conductors to each layer.

The applicant further alleges on page 7, line 18, through page 8, line 2, that Tamura discloses "a single transducer element;" to which the examiner respectfully disagrees. The applicant asserts that "it would have been self-evident to one of ordinary skill in the art that Tamura only discloses a single transducer element." However, Tamura clearly discloses two sets of electrodes and electrets that are capable of separately-controlling a diaphragm, although depicted to control the diaphragm together in a balanced manner. The rejection shows that each set corresponds to a transducer element as defined in the claim. It is noted that Tamura only discloses one diaphragm, which could lead to the conclusion that only transducer exists. However, the elements of the claim need only be capable of changing thickness, which is achieved by the presence of the air gap. So even though diaphragm 23 is shared between each set to enable changing thickness it does not need to be considered as part of either element.

The applicant alleges that the other claims not treated above are allowable over the cited prior art for at least the same reasons. However, as all of the applicant's argument have been shown to be either moot or unpersuasive, the rejections of claims 1, 2, 4-14, 16-18 and 20-25 are maintained.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WFB



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SUPERVISORY PATENT EXAMINER